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THE GENUS *THAUMATOMYRMEX* MAYR WITH
DESCRIPTION OF A VENEZUELAN SPECIES
(HYM.: FORMICIDAE)

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Ants of the genus *Thaumatomyrmex* have remained among the rarest of ants since the genus was first described in 1887. Although they are among the most striking and easily recognized ants because of their remarkable spinose mandibles, not a dozen specimens have been recorded and these only workers. The genus is exclusively neotropical and the five known species have been described from one or two workers found in Cuba, Honduras, British Guiana, Trinidad, Brasil and Bolivia.

Described below is a sixth species which I took in Venezuela in an unusual habitat, a bird's nest on a tiny island submerged at high water in the Orinoco Delta.

Their rarity and discontinuous distribution suggest that ants of the genus *Thaumatomyrmex* are archaic relicts. They belong to the primitive family *Ponerinae* which itself indicates antiquity. My British Guiana and Venezuelan ants were taken in rain forest, the Cuban and Honduran specimens doubtless came from a similar habitat, as may have come the Brazilian records, and my Trinidad worker was found in bamboo of second-growth forest ("lastro") at the foothills of the Northern Range which is covered with rain forest. Judging from other ants and other animals of the neotropical rain forest, this has been a stable and persistent habitat for a very long time.

Although the Venezuelan worker was found in a bird's nest this species is probably terrestrial like the other species and had merely adapted itself to temporary flooded conditions during high water in the Delta. The food habits of none of the species are known but the shape of the mandibles suggests that they are used for capturing other arthropods. The occurrence of the Venezuelan worker in a bird's nest also occupied by a colony of *Camponotus* raises the possibility of its preying on other ant broods, especially larvae and pupae which could be grasped easily and punctured with the spinose mandibles.

The six species of *Thaumatomyrmex* differ but slightly and form a homogeneous group differing markedly from all other ants. When Mayr described the first species and the genus in 1887 (Verh. k. k. Zool. - bot. Ges. Wien, 37:530-532) he stated that the genus seemed near no other ponerine genus. Emery in 1901 placed it in the tribe *Thaumatomyrmii* (Ann. Soc. Ent. Belg. 45:36) and was followed by Ashmead (Canadian Ent., 1905, p. 392) who placed it in the Family *Poneridae*, Subfamily II - *Pachycondylinae*, Tribe III - *Cylindromyrmecini*, which consisted of *Cylindromyrmex* and *Thaumatomyrmex*. This ill-advised attempt by one unfamiliar with world ants was justly criticized by Emery in 1906 (Zool. Anz. 29:717-718) on the grounds that the mandibles of the two genera are utterly different. In Wheeler's "Ant Book" (reprints of 1913 and 1926, p. 135) curiously enough this genus was placed in Tribe 3, *Ectatommi*, although in 1922 (Bull. Amer. Mus. Nat. Hist., 45:637, 644) he followed Emery's Genera Insectorum allocation. In 1911 (Genera Insectorum, Fasc. 118, p. 48) Emery placed *Thaumatomyrmex* in a tribe by itself, *Thaumatomyrmecini*, and this classification is followed by the writer.

Ants of this genus are medium-sized (3.8 - 4.75 mm.) ponerine ants, with a high petiolar node, a well-developed sting and a black color but are at once recognized by their mandibles. These are narrow and arcuate with three spiniform teeth of which the apical tooth is longest. Other characters include frontal lobes distinct and raised, 12-jointed antennae

widely separated, large, convex eyes situated close to the mandibular insertions, distinct pro-mesonotal impression, 1st gastric segment markedly larger than the following segments, tibiae with a single large, pectinate spur, claws simple, pilosity of sparse, long, appressed hairs. The differences between the species lie chiefly in the proportions of the teeth, width of the head compared with its length, convexity of the pronotum and mesonotum, angularity or lack of angularity between the epinotal basal and declivous surfaces, shape of the petiolar node and development of striation or punctation. These differences are perfectly distinct yet no species varies so much that it might be placed in any other genus, for there is none near it.

- The species are as follows, all known only by the worker;
- T. mutilatus* Mayr, 1887, Verh. Zool. - bot. Ges. Wien, 37:531-532, worker; Emery, 1894, Berl. Ent. Zeitschr, 59:38, fig., worker (not seen); Emery, 1911, Genera Insectorum, Formicidae, Ponerinae, Fasc. 118, pp. 48-49, Pl. 2, Figs. 5. 5b; Mann, 1922, Proc. U. S. Nat. Mus., 61:4; Borgmeier, 1923, Arch. Mus. Nac. Brasil, 24:62; Wheeler, 1926, "Ants", p. 17, fig. 2; Creighton, 1928, Psyche, 35:162-6; Weber, 1939, Ann. Ent. Soc. Amer.; 32:92-3, 98-9.
- T. ferox* Mann, 1922, Proc. U. S. Nat. Mus., 61:3-4, Fig. 1; Creighton, *loc. cit.*; Weber, *loc. cit.*
- T. cochlearis* Creighton, 1928, Psyche, 35; 162-166, Fig. 1; Wheeler, 1937, Bull. Mus. Comp. Zool., 81:445; Weber, *loc. cit.*
- T. atrox* Weber, 1939, Ann. Ent. Soc. Amer., 32:92-3, 98-9, Fig. 3.
- T. manni* Weber, 1939, Ann. Ent. Soc. Amer., 32:99.
- T. paludis*, sp. nov.

They may be separated by means of the following key which is adapted from that in my 1939 paper:

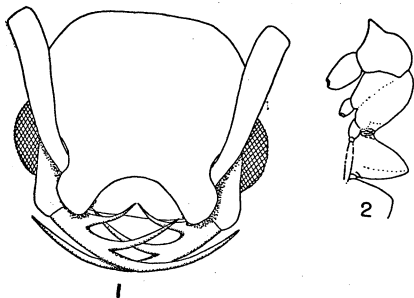


Fig. 1. — Head of *Thaumatomyrmex paludis*, sp. nov.

Fig. 2. Thorax and petiole in side view of same.

diameters; frontal lobes conspicuous, obliquely raised, convex, extending slightly in front of the antero-lateral angles of the head; mandibles with three teeth in the form of narrow, acute spines, the apical tooth barely reaching the sides when the mandibles are closed, the median tooth not quite reaching the opposite frontal lobe, and the basal tooth barely reaching middle of clypeus; antennal scape exceeding occipital margin by less than its distal diameter, funicular joints 2-10 broader than long. Thorax from above, excluding "neck", twice as long as broad, sides of pronotum slightly convex, rest of thoracic sides subparallel; in side view pronotum evenly convex, promesonotal impression sharp and acute, meso-epinotum forming a broad, even convexity. Petiole in side view conic, biconvex, apex acutely rounded, from above 1.7 times broader than long, excluding petiole, and with sides obtusely

angular. Basal segment of gaster from above slightly broader than long, sides and anterior margin convex. Legs slender, moderately short.

Smooth and shining except for base of mandibles, frontal lobes and margin of antennal scrobes being finely striate. Front of head back of clypeus with about a score of reclinate to appressed, mostly obtuse, coarse hairs or bristles, similar hairs more numerous on clypeus, and sparsely on rest of body, antennae and tarsi with short, appressed hairs moderately abundant, femora and tibiae with longer and sparser hairs, no pubescence visible under ordinary magnifications.

Vitreous black; mandibles, antennae, tarsi and ends of femora and tibiae yellowish brown to medium brown. Hairs honey yellow.

Holotype: one worker (N° VI8a) which I took February 2, 1935 in the Orinoco Delta, Venezuela.

This species has distinctly smaller eyes than *T. mutilatus*, has a more evenly convex pronotum, lower epinotum, and in side view, the anterior and dorsal surfaces of the 1st gastric segment meet at an approximately right, instead of a distinct acute angle. It differs markedly from *T. cochlearis* in reduced sculpturing of head, having longer antennal scapes, more rounded occipital margin, rounded instead of angulate epinotum and much more compressed petiole. The Venezuelan species is readily told from *T. ferox* by its shorter mandibular teeth, shorter antennal scapes, convex pronotum dorsally and petiole more acute at apex. The holotype of *T. atrox* is distinctly larger (thorax length, excluding "neck", 1.3 mm.) with longer mandibular teeth, larger eyes (0.29 mm. diameter), broader head, has a small angularity in the promesonotal impression, a much more abruptly descending epinotum and a petiolar node much blunter at apex. *T. manni* has a much broader head with longer mandibular teeth.

Biology

The ant was taken opposite the east side of Isla Tórtola on a small island roughly 900×200 meters. The island was separated from a larger island by moderately deep water of a "caño" and was submerged at high water to the tops of the low trees. *Cecropia* and dense grass occupied the parts of the island not forested. A small *Crematogaster* clearly was the dominant ant and was abundant. *Pseudomyrma* occurred on the bushes and trees, *Azteca* in *Cecropia* and *Camponotus* (*Myrmosphinctus*) *sexguttatus* (Fabr.) and *C.* (*Myrmobrachys*) *zoc* Forel nested in hollow twigs. The *Thaumatomyrmex* was taken in an abandoned birds nest which was also occupied by a colony of the *Camponotus sexguttatus*, brood of the latter being in hollow twigs comprising part of the nest. Tiny (1.2 mm.) workers of *Brachymyrmex*, an ordinarily hypogaieic genus, and a worker *Odontomachus haematoda* L., a species usually terrestrial, were found on or in the nest. In the same tree but above the nest were colonies of *Crematogaster* and *Camponotus zoc*.

RESUMEN

Hormigas del género *Thaumatomyrmex* han quedado entre las más raras desde que se describió el género en 1887. Aunque estas hormigas se reconocen fácilmente por sus mandíbulas espinosas, apenas si se han obtenido una docena de ejemplares, todos de la categoría de trabajadoras. El género es exclusivamente del neotrópico, habiendo sido ya descritas cinco especies provenientes de Cuba, Honduras, Guayana Inglesa, Trinidad, Brasil y Bolivia. Aquí se describe la sexta especie: *T. paludis* Weber, proveniente de la Isla Tórtola del Delta Orinoco, encontrada en un nido de ave. Quizás esta adaptación sea debida a que la isla queda sumergida durante los pleamares. El mismo nido contenía una colonia de *Camponotus* cuyas larvas posiblemente servían de presa a los *Thaumatomyrmex*.